

BEFORE THE  
POLLUTION CONTROL HEARINGS BOARD  
STATE OF WASHINGTON

1 IN THE MATTER OF )  
2 CROWN ZELLERBACH CORPORATION, )

3 Appellant, )

PCHB No. 710

4 v. )

FINAL FINDINGS OF FACT,  
CONCLUSIONS OF LAW AND ORDER

5 STATE OF WASHINGTON, )  
6 DEPARTMENT OF ECOLOGY, )

7 Respondent. )

8 THIS MATTER, being an appeal from the denial of a tax credit  
9 and exemption certification for alleged pollution control equip-  
10 ment, came on regularly for a formal hearing before the Pollution  
11 Control Hearings Board at its office in Lacey, Washington on  
12 January 20, 1975. Board members present were Chris Smith, W. A.  
13 Gissberg and Walt Woodward. Appellant Crown Zellerbach Corporation  
14 was represented by its attorney, Graham H. Fernald; Respondent  
15 State of Washington, Department of Ecology was represented by its  
16 attorney, Joseph J. McGoran; and the Board having considered the  
17 sworn testimony, exhibits, records and files herein, and exceptions  
18 to its proposed Order and replies thereto, and the Board having  
19 ~~granted in part and denied in part said exceptions,~~ the Board now  
20 makes and enters the following

21 FINDINGS OF FACT

22 I.

23 Appellant is a corporation duly authorized to do business in  
24 the State of Washington, with its principal place of business in

1 this state, insofar as relevant to this appeal, at Camas, Wash-  
2 ington.

3 II.

4 Appellant owns and operates a kraft pulp mill located at  
5 Camas. The pulp mill includes three recovery furnaces or boilers  
6 numbered 1, 2 and 3 which perform two functions essential for the  
7 economical production of kraft pulp: (1) recovery of chemicals  
8 used in pulping of wood chips, and (2) production of heat for  
9 steam used in the mill.

10 III.

11 In kraft pulping, wood chips are cooked in digesters in an  
12 alkaline chemical solution composed principally of sodium hy-  
13 droxide and other sodium and sulfur compounds. Heat and pressure  
14 are applied to the digesters and the wood chips are cooked into  
15 pulp fibers and liquid lignin and other organic constituents.  
16 The pulp fibers are removed for further processing into commer-  
17 cial products. The lignin and pulping chemicals, called weak  
18 black liquor, consist of about 15 percent dissolved solids, and  
19 about 85 percent water, by weight.

20 IV.

21 The weak black liquor is concentrated by evaporation to 60  
22 to 65 percent solids and fed into the recovery boilers. The  
23 boilers burn the lignin and reduce the sodium-sulfur compounds to  
24 a smelt. The heat produced from the burning is absorbed by

1 water-filled tubes inside the boilers to produce steam. The  
2 smelt from the bottom of the boilers is processed and the chemi-  
3 cals are recovered for reuse in the pulp cooking.

4 V.

5 Gases from the boilers are used to evaporate weak black  
6 liquor through direct contact with the liquor, during which  
7 contact the gases absorb chemicals (particularly sulfide ions)  
8 which are discharged into the atmosphere.

9 VI.

10 Boilers 1, 2 and 3 were installed in 1937, 1948 and 1957  
11 respectively. They have been kept in good condition by con-  
12 tinuous maintenance and periodic overhaul. This system of main-  
13 tenance assures that the boilers will continue to perform their  
14 essential function (other than emission control) efficiently on  
15 an indefinite basis. There is no reason, except to meet air  
16 emission limits, for appellant to replace or modify any or all of  
17 these boilers to continue pulp production at present levels at  
18 its Camas kraft mill.

19 VII.

20 From a strictly technological standpoint, recovery boilers  
21 are not necessary to the manufacture of pulp. However, if they  
22 were not used, the chemicals used in the pulp manufacturing  
23 process would have to be disposed of in some other fashion.  
24 Discharge of these chemicals into the waterways is barred by

1 water, pollution control laws. Recovery of the chemicals through  
2 the boilers not only solves the chemical disposal problem but  
3 also results in substantial economies to appellant. Thus al-  
4 though the recovery boilers are not technologically necessary to  
5 manufacture pulp, they are necessary to do so economically.

#### 6 VIII.

7 Respondent has adopted limits for gaseous emissions dis-  
8 charged from the recovery boilers into the atmosphere. WAC  
9 18-36-030(2) limits the discharge of certain sulfide emissions,  
10 referred to as total reduced sulfur or TRS, to two pounds per ton  
11 of air-dried kraft pulp, or seventy parts per million from each  
12 recovery stack, whichever is the more restrictive. WAC 18-36-  
13 030(3) requires that by July 1975, TRS emissions shall not exceed  
14 one-half pounds of sulfur per ton of kraft pulp or seventeen and  
15 one-half parts per million from each recovery stack, whichever is  
16 the more restrictive, or "such other limit of TRS that proves to  
17 be reasonably attainable utilizing the latest in design of re-  
18 covery furnace equipment, controls, and procedures." WAC 18-  
19 36-030(5) requires that by July 1975, particulate emissions from  
20 all recovery stacks shall not exceed four pounds per ton of air-  
21 dried kraft pulp.

#### 22 IX.

23 After the promulgation of WAC Chapter 18-36, appellant began  
24 extensive research and testing to determine how to comply with

1 the limitations of that regulation. From an operational stand-  
2 point without regard to emission limits, appellant could have  
3 continued to operate boilers 1, 2 and 3 at present pulp produc-  
4 tion levels indefinitely. However, appellant was unable to  
5 operate the No. 1 and No. 2 boilers at that level and meet the  
6 1975 limits on TRS emissions set by WAC 18-36-030(3).

7 Appellant's research and testing program determined that  
8 boilers 1 and 2 either could not meet the 1975 TRS limits at all,  
9 or could not meet such limits without such drastic curtailment  
10 of pulp production as would render the Camas mill uneconomic.  
11 Appellant also initially determined that if boiler 3 was operated  
12 at reduced levels, its emissions could meet the 1975 TRS limits.  
13 Installation of a new recovery boiler would then be necessary, to  
14 replace boilers 1 and 2 and lost production at boiler 3, to  
15 maintain the then-current level of pulp production. The total  
16 cost for the new boiler was estimated to be \$10,673,000, and  
17 appellant initially determined to use this approach to meet the  
18 1975 TRS and particulate limits.

19 X.

20 Appellant's research and testing program subsequently  
21 determined that curtailment of production at boiler 3 would not  
22 by itself permit that boiler to meet the 1975 TRS limits at  
23 desired production levels. Accordingly, appellant determined to  
24 add a scrubber to boiler 3, at a cost estimated to be \$1,488,000.

XI.

New boiler 4 is of a conventional design, but it is deliberately sized larger than older boilers to permit more complete combustion. Black liquor fed to the new boiler will be oxidized prior to concentration in the direct contact evaporator.

XII.

Boiler 4 and boiler 3 with scrubber will enable appellant's Camas kraft mill to meet the Department's 17-1/2 ppm TRS limit and its four-pound per ton particulate limit.

XIII.

The three existing recovery boilers at appellant's Camas kraft mill have rated capacities listed by the manufacturers, totaling 2,010,000 pounds of black liquor solids per day. These rated capacities were an approximation of the total pounds of black liquor solids that appellant expected to burn at the time these boilers were ordered. Since installation of these boilers, appellant has increased its production at Camas and now places an average load of 2,336,000 pounds of black liquor solids per day through the existing recovery boilers, and a peak load of 2,624,000 pounds per day. This high-loading situation places a chemical overload on the boilers which increases air pollution and contributes to operating problems. To solve the air pollution problems appellant proposes to install new boiler 4, and to install a scrubber on the existing boiler 3. Appellant will then

1     discontinue operating boilers 1 and 2.

2                     XIV.

3             The new boiler 4 combined with modified boiler 3 is expected  
4     to be capable of producing an average of 820 tons of kraft pulp  
5     per day, compared with average production from the existing  
6     boilers of 730 tons of kraft pulp per day. The peak production  
7     will be 918 tons per day, compared with a current peak production  
8     of 820 tons per day.

9                     XV.

10            Appellant timely filed for a pollution control tax exemption  
11   and credit certificate for the new boiler and related equipment.  
12   The respondent approved the precipitator for certification, and  
13   gave partial approval to the balance of the application. The  
14   partial approval was based on the ratio between the rated capacity  
15   of the new boiler, reduced by the nameplate capacity of the  
16   facilities being taken out of service or derated, divided by the  
17   capacity of the new boiler.

18            Before this Board, appellant moved to amend its appeal so  
19   as to seek as an alternative to certification for the entire cost  
20   of the new boiler and related equipment, certification and ap-  
21   proval for the cost of the new boiler and related equipment equal  
22   to the cost of replacing the existing boilers at their current  
23   production levels. Without objection from respondent, the Board  
24   granted this motion. Accordingly, with respect to boiler 4 and

related equipment, appellant now seeks (as an alternative to certification and approval of the entire cost thereof) certification and approval of 89 percent of the cost of the new boiler and related facilities, that being the ratio of production from the existing boilers (730 tons per day) to production from new boiler 4 with modified boiler 3 (820 tons per day).

Based upon the foregoing Findings of Fact, the Board makes the following

#### CONCLUSIONS OF LAW

##### I.

Appellant's new boiler 4 and related equipment and facilities are to the extent they replace the existing average kraft pulp production of the existing boilers, designed and intended to be operated primarily for the control, capture and removal of pollutants from the air and are suitable, reasonably adequate, and meet the intent and purposes of Chapter 70.94 RCW.

##### II.

To such extent, the new boiler and related equipment and facilities qualify for the tax exemption and credit provided by RCW Chapter 82.34.

##### III.

To the extent that respondent's regulations (WAC 173-24-030 and 100) deny the certification of appellant's facility based upon the fact that it is a facility which is necessary for the



1 manufacture of products, such regulations are unlawful because  
2 they are outside the framework and policy of RCW 82.34.

3 From which follows this

4 ORDER

5 The Department of Ecology shall approve appellant's appli-  
6 cation for a certificate authorizing tax exemption and credit  
7 provided by RCW 82.34 with respect to so much of the cost of  
8 new boiler 4 and related equipment and facilities being  
9 installed at appellant's Camas kraft mill as is attributable to  
10 replacement of average production from the existing boilers of  
11 730 tons of kraft pulp per day.

12 DONE at Lacey, Washington this 7th day of August, 1975.

13 POLLUTION CONTROL HEARINGS BOARD

14 (see dissent)

15 CHRIS SMITH, Chairman

16 W. A. Gissberg  
17 W. A. GISSBERG, Member

18 Walt Woodward  
19 WALT WOODWARD, Member

SMITH dissenting:

Chapter 82.34 RCW makes no reference to tax exemption and credit for process changes designed to reduce pollution. However, RCW 82.34.010(1) defines "facility" to include "any part or accessories thereof," which allows the giving of partial approval for those portions of a facility whose primary purpose is pollution control.

WAC 173-24-060 states:

"In any case in which the applicant desires approval for all or part of any facility necessary for the manufacture of products, the applicant shall supply sufficient information to the Department to establish the basis for identification of a pollution control element in such facility." (emphasis added)

WAC 173-24-070 establishes standards for such identification:

"A portion of a facility may be identified conceptually as a pollution control element, even though physically part of a larger whole, if such identification can be reasonably made in view of Chapter 82.34, RCW, and the pollution control element so identified meets the requirements for approval set forth is [sic] WAC 173-24-080 through WAC 173-24-110."

Chapter 82.34 RCW does not authorize approval, for tax exemption and credit, of an amount of money which represents the cost of a pollution control facility, had it been built or installed. RCW 82.34.010 clearly limits applicability to physically identifiable facilities or systems.

Regrettably, the present system of tax exemptions and credits tends to discourage process changes and favor "black box" controls at the end of the line.

A system which taxed effluent discharge, however, could be adjusted to achieve any desired level of pollution abatement, allow an industry to solve its pollution problem in an economically advantageous manner, and stimulate development of "cleaner" manufacturing processes. (See

Pollution, Prices, and Public Policy," Brookings Institution, 1975.)

That portion of the facility change which meets inter alia, the Operation Test (WAC 173-24-100) qualifies for the tax exemption and credit approval provided by chapter 82.34 RCW. It appears that the scrubber attached to the Number 3 boiler may meet this test.

I would vacate the Department's approval of any portion of the new boiler and would remand this matter to respondent for its determination of the proper level of partial approval.

  
CHRIS SMITH, Chairman

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